C L A I M S

What is claimed is:

1. A dielectric composition adapted for use in PCBs, chip carriers and the like electronic packaging products, said dielectric composition comprising:

a cured resin material; and

a particulate filler within said cured resin material, said dielectric composition forming a substantially solid layer for use within a PCB, chip carrier or the like electronic packaging product as a dielectric layer such that said dielectric layer does not include continuous fibers, semi-continuous fibers or the like as part thereof.

2. The dielectric composition of claim 1 wherein said cured resin material is a polymer resin.

3. The dielectric composition of claim 2 wherein said polymer resin exhibits a high glass transition temperature (Tg).

4. The dielectric composition of claim 3 wherein said polymer resin is substantially dicyandiamide free.

5. The dielectric composition of claim 2 wherein said cured resin is a high molecular weight, reactive thermosetting resin.

6. The dielectric composition of claim 2 wherein said cured resin comprises from about 20 percent by weight to about 90 percent by weight of said substantially solid layer.

7. The dielectric composition of claim 1 wherein said particulate filler is selected from the group consisting of alumina, aluminum oxide, aluminum nitride, silicon nitride, silicon carbide, beryllium oxide, boron nitride, diamond powder, titanium oxide, silica, ceramic and combinations thereof.

8. The dielectric composition of claim 7 wherein said silica is selected from the group consisting of spherical amorphous silica, hollow silica microspheres and combinations thereof.

9. The dielectric composition of claim 1 wherein said particles each have a size within the range of from about 200 Angstroms to about 35 microns.

10. The dielectric composition of claim 1 wherein said particulate filler comprises from about 10 percent to about 80 percent by weight of said dielectric layer.

11. The dielectric composition of claim 1 further including a coupling agent.

12. The dielectric composition of claim 11 wherein said coupling agent is silane.

13. The invention of claim 1 wherein said dielectric layer has a dielectric constant within the range of from about 2.8 to about 4.0.

14. The invention of claim 1 wherein said dielectric layer has a Tg within the range of from about 165 deg. C. to about 200 deg. C.

15. The invention of claim 1 wherein said dielectric layer has a loss factor at 1 MHz within the range of from about 0.005 to about 0.028.

16. The invention of claim 1 wherein said dielectric layer has a decomposition temperature within the range of from about 300 deg. C to about 330 deg. C.

17. The dielectric composition of claim 1 further including a flexibilizer.

18. The dielectric composition of claim 17 wherein said flexibilizer is Inchem PKHS-40.

19. The dielectric composition of claim 1 further including a flow-control additive.

20. The dielectric composition of claim 19 wherein said flow-control additive is Degussa R-972.